IUWDS International Geophysical Calendar for 1969

(See other side for instructions on the use of this Calendar)

1969 JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

1969 FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

1969 MARCH

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

1969 APRIL

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

1969 MAY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1969 JUNE

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

1969 JULY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

1969 AUGUST

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

1969 SEPTEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

1969 OCTOBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

1969 NOVEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

1969 DECEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1970 JANUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

(14) Regular World Day (RWD)

[18] Day of Solar Eclipse

3 Day with unusual meteor shower activity, Northern Hemisphere

7] Day with unusual meteor shower activity, Southern Hemisphere

[4] World Geophysical Interval (WGI)

(19) Quarterly World Day (QWD) also a PRWD and RGD

(15) Priority Regular World Day (PRWD)

(1) Regular Geophysical Day (RGD)

[5] Special Equatorial Interval (see text)

TABLE OF WORLD DAYS MARKED ON THE CALENDAR

1969	RWD	PRWD	QWD	RGD	WGI	ECL.	METEORS
Jan.	14, 15, 16	15		1, 8, 15, 22, 29	6-19		3, 15
Feb.	11, 12, 13	12		5, 12, 19, 26			
Mar.	18, 19, 20	19	19	5, 12, 19, 26	10-23	18	
Apr.	15, 16, 17	16		2, 9, 16, 23, 30			21, 22
May	13, 14, 15	14		7, 14, 21, 28			4-6
June	17, 18, 19	18	18	4, 11, 18, 25	9-22		8-10, 13-14
July	15, 16, 17	16		2, 9, 16, 23, 30			27-31
Aug.	12, 13, 14	13		6, 13, 20, 27			10-14
Sep.	9, 10, 11	10	10	3, 10, 17, 24	8-21	11	
Oct.	14, 15, 16	15		1, 8, 15, 22, 29			20-22
Nov.	18, 19, 20	19		5, 12, 19, 26			17
Dec.	16, 17, 18	17	17	3, 10, 17, 24, 31	8-21		4-6, 12-15

Special Equatorial Interval March 7 to April 4.

OPERATIONAL EDITION, SEPTEMBER 1968

SEE OTHER SIDE

IUWDS International Geophysical Calendar for 1969

EXPLANATIONS

1. **Purpose.** The International Geophysical Calendar designates days and intervals selected for special attention for geophysical observations, experiments, data interchange or analyses. It is thus a framework for world-wide interdisciplinary coordination in those programs where it is not practical or meaningful to carry out the same work for each and every day. The Calendar serves mainly the branches of geophysics dealing with the earth's atmosphere. A principal use is for the coordination of the sampling of the many phenomena which vary significantly during the course of a year. The Calendar is prepared by the International Ursigram and World Days Service (IUWDS) with the advice of spokesmen for various scientific disciplines. It is common practice for individual geophysical stations or groups of stations to arrange some of their plans for observations according to the Calendar. Thus geophysicists can expect that their colleagues in other countries, in other laboratories and in other geophysical disciplines will tend to be making increased efforts for the days and intervals marked on the Calendar; the amount of geophysical data in existence, at the World Data Centers and elsewhere, will accordingly be greater for Calendar days.

2. **Universal Time** (UT) is the standard of time for all world days on the Calendar, i.e., each begins at 0000 UT and ends at 2400 UT.

3. **Regular Geophysical Days (RGD)** are each Wednesday throughout the year. This weekly sampling schedule is particularly designed for the purposes of the meteorological program but has also been adopted for some other geophysical programs.

4. **Regular World Days (RWD)** are three consecutive days each month, always Tuesday, Wednesday, Thursday near the middle of the month. They are intended for observations, experiments or analyses which can or need be made for about 10% of days and which should be spaced (in groups of three days) throughout the year.

5. **Priority Regular World Days (PRWD)** are one day each month—the RWD which are also a RGD (Wednesday). They are for work which can or needs to be done only one day each month throughout the year.

6. **Quarterly World Days (QWD)** are one day in each quarter of the year. They are the PRWD which fall within the World Geophysical Intervals (WGI) and are also a RGD (Wednesday). The QWD serve to coordinate seasonal high-altitude rocket experiments.

7. **World Geophysical Intervals (WGI)** during 1969 are fourteen consecutive days in each season, beginning on the second Monday of the selected months. They always include the three RWD of the month and the QWD for the season. The WGI are intended for intensified programs aimed at the statistics of seasonal variations or the timing of seasonal changes. The schedule of WGI relative to the equinoxes and solstices is usually made different from year to year; thus the WGI have been shifted two months later than those of 1968.

8. **Solar Eclipses** are March 18 (annular) observable Indian Ocean from near Africa to north of Australia into Pacific Ocean, and September 11 (annular) observable North Pacific Ocean southeast to coast of Peru and ends in Bolivia. Geophysical stations in the eclipse zones and their conjugate areas treat these days as world days and undertake special programs to study eclipse effects on the earth's atmosphere. For maps of the eclipse zones and pertinent details see any standard astronomical ephemeris or yearbook.

9. **Meteor Showers** of special interest are also marked on the Calendar, including some of the important visual showers and also unusual showers observable mainly by radio and radar techniques. The dates are coded to indicate whether the shower is observable in the northern or the southern hemisphere. Attenion is called to these days (selected by P. M. Millman, Ottawa) in case ionization produced by meteors may account for unusual effects in other geophysical experiments.

10. **"World Days" not appearing on Calendar.** The occurrence of unusual solar or geophysical conditions are announced or forecast through various types of geophysical **"Alerts"** which are widely distributed by telegram and radio broadcast on a current schedule. The types of Alerts are: magnetic storm (in telegrams MAGSTORM), solar activity (SOFLARE, PROTONFLARE or SOFLARE FLARES), and cosmic ray event (COSMIC EVENT). Sudden and unusual stratospheric warmings (STRATWARM) are also designated. These Alerts are issued by the IUWDS World Warning Agency or under certain circumstances by one of the solar-geophysical Regional Warning Centers. The meterological telecommunications network coordinated by WMO carries these worldwide Alerts once daily soon after 0400 UT. Many geophysical stations in the various disciplines increase their programs or carry on special experiments to take advantage of the special solar or geophysical conditions during the period of Alert. Selections of **Retrospective World Intervals** are later announced in suitable publications. An additional service of the Regional Warning Centers is to notify geophysical and solar stations promptly **(Ursigrams)** with summary details of immediately significant geophysical observations and of major solar events which have important and sometimes long-lasting geophysical effects. The telegraphic addresses of the Regional Warning Centers are as follows: SOLTERWARN BOULDER (USA); DEMPA TOKYO (JAPAN); IZMIRAN MOSCOW (USSR); IONOSPHAERE DARMSTADT (GFR) or CNETAGI MEUDON (FRANCE); IPSO SYDNEY (AUSTRALIA). Associate RWC operate in some other localities.

RECOMMENDED SCIENTIFIC PROGRAMS
OPERATIONAL EDITION

(The following material was reviewed in 1968 by spokesmen of IUCSTP for the various scientific disciplines as suitable for coordinated geophysical programs in 1969, and at the 11th Meeting of COSPAR.)

11. **Meteorology.** Particular efforts should be made to carry out an intensified program on the **RGD**—each Wednesday, UT. A desirable goal would be the scheduling of meteorological rocketsondes, ozone sondes and radiometer sondes on these days, together with maximum-altitude rawinsonde ascents at both 0000 and 1200 UT.

During **WGI** and **STRATWARM** Alert intervals, intensified programs are also desirable, preferably by the implementation of **RGD**-type programs (see above) on Mondays and Fridays, as well as on Wednesdays.

Atmospheric Electricity. Not-continuous measurements and data reduction for continuous measurements of atmospheric electric current density, field, conductivities, space charges, ion number densities, ionosphere potentials, sferics, ELF, condensation nuclei, etc.; both at ground as well as with radiosondes, aircraft, rockets; should be done with first priority on the **RGD** each Wednesday, beginning on 1 January 1969 at 0000 UT, 8 January at 0600 UT, 15 January at 1200 UT, 22 January at 1800 UT, 29 January at 0000 UT, etc., (beginning hour shifts six hours each week, but is always on a Wednesday.) Minimum program is at the same time on **PRWD** beginning with 15 January 1969 at 1200 UT. Data reduction for continuous measurements should be extended, if possible, to cover at least the full **RGD** including, in addition, at least 6 hours prior to indicated beginning time.

12. **Geomagnetism.** It has always been a leading principle for geomagnetic observatories that operations should be as continuous as possible and the great majority of stations undertake the same program without regard to the Calendar. Special efforts recommended are: (a) Stations recording quick-run micropulsations (with fast chart speeds) are asked to make such records on every **RGD**—each Wednesday, UT—according to the following schedule: 1969 Jan. 1 from 0700 to 1100; Jan. 8 from 0800 to 1200; Jan. 15 from 0900 to 1300; etc. The observatories are not obliged to duplicate their recordings for the World Data Centers except by special request (see IQSY World Days Manual under Retrospective World Intervals on Micropulsations). (b) Stations equipped for making magnetic observations, but which can not carry out such observations and reductions on a continuous schedule are encouraged to carry out such work at least on **RWD** (and during times of **MAGSTORM** Alert).

13. **Ionosphere.** For the vertical incidence sounding program, the summary recommendations are: (a) soundings to be made at five minute intervals on **RWDs** for stations normally making observations every quarter hour; all other stations are recommended to make at least quarter hourly observations on **RWDs**; (b) f-plots are made for high latitude stations and for the so-called "representative" stations at lower latitudes for all days (i.e., including **RWDs** and **WGIs**) (Continuous records of ionospheric parameters are acceptable in place of f-plots at temperate and low latitude stations); (c) profile parameters hc, qc or recommended similar parameters to be determined and sent to WDCs for **RWDs** for all stations except those undertaking full profile programs or producing monthly median profiles; (d) copies of hourly ionograms with appropriate scales for **RWDs** are to be sent to WDCs; (e) stations in the eclipse zone and its conjugate area should take continuous observations on solar eclipse days and special observations on adjacent days.

For the ionospheric drifts program, observations are made at least on all **RWDs**, on all **WGIs**, on every Wednesday (**RGDs**) and on every Thursday. It is essential that sufficient observations be made to determine the diurnal variations. Hourly tabulations for all days mentioned are sent to the WDCs.

For the ionospheric absorption program, hourly observations are made at least on all RWDs and hourly tabulations sent to WDCs. Observations should be continuous on **solar eclipse** days for stations in eclipse zone and its conjugate area. Special efforts should be made to obtain additional absorption measurements at temperate latitude stations during the period of Absorption Winter Anomaly, particularly on days of abnormally high or abnormally low absorption (approximately November-March, Northern Hemisphere; May-September, Southern Hemisphere.)

For back-scatter and forward-scatter programs, observations should be made and analyzed on all **RWDs** at least.

For ELF noise measurements involving the earth-ionosphere cavity resonances any special effort should be concentrated during the **WGIs.**

It is recommended that more intensive observations in all programs be considered on days of **unusual meteor activity.**

14. **Solar Activity.** Observatories making specialized studies of solar phenomena, particularly using new or complex techniques, such that continuous observation or reporting is impractical, are requested to make special efforts to provide to WDCs data for **solar eclipse** days, **RWDs**, and during **SOFLARE PROTON FLARE Alerts.** The attention of those recording solar noise spectra, solar magnetic fields and doing specialized optical studies is particularly drawn to this recommendation.

15. **Cosmic Rays, Aeronomy.** Experimenters should take into account that observational effort in other disciplines tends to be intensified on the days marked on the Calendar, and schedule balloon and rocket experiments accordingly if there are no other geophysical reasons for choice.

16. **Space Research.** It is desirable to make rocket measurements of ionospheric characteristics on the same day at as many locations as possible. Where feasible, experimenters should endeavor to launch rockets on the **Quarterly World Days (QWD)** or on **RWDs**, since these are also days when there will be maximum support from ground observations.

17. **Special Equatorial Interval.** The period March 7 to April 4, 1969 has been designated as a "Special Equatorial Interval" to study ionospheric conditions during an equinox near the crossing point of the magnetic dip and the geographic equators. Major participants will be the German research ship "Meteor" at the crossing point and the German research ship "Planet". Participation is invited by established stations within the equatorial belt, particularly those in regions where there is a large latitude difference between the geographic equators and the line of zero magnetic dip. Ionosphere stations should increase their frequency of observations, if possible, and rocket launches should be scheduled during this period by preference. (Information supplied by Prof. W. Dieminger, Max-Planck-Institut für Aeronomie, 3411 Lindau über Northeim, German Federal Republic.)

The International Ursigram and World Days Service (IUWDS) is a permanent scientific service of the International Union of Radio Science (URSI), with the participation of the International Astronomical Union and the International Union Geodesy and Geophysics. IUWDS adheres to the Federation of Astronomical and Geophysical Services of the International Council of Scientific Unions. The IUWDS coordinates the international aspects of the world days program and rapid data interchange, and also publishes subsequently **Abbreviated Calendar Records** of solar and geophysical indices and events.

This Calendar for 1969 has been drawn up by A. H. Shapley, Chairman, and J. V. Lincoln, Deputy Secretary, of the IUWDS Steering Committee, in close association with the IUCSTP Commission and the Reporters and spokesmen for the various scientific disciplines and COSPAR. Similar Calendars have been issued annually beginning with the IGY, 1957-58, and have been published in various widely available scientific publications.

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Additional copies are available upon request to IUWDS Secretary, Dr. P. Simon, Observatoire, 92 Meudon, France, or IUWDS Deputy Secretary, Miss J. V. Lincoln, WDC-A Upper Atmosphere Geophysics, ESSA, Boulder, Colorado, 80302, U.S.A.

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